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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,765	04/30/2001	Akihiro Sanda	Q63763	9192
7590	12/30/2003		EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213			DRUAN, THOMAS J	
			ART UNIT	PAPER NUMBER
			3724	
			DATE MAILED: 12/30/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/843,765	SANDA ET AL.
	<b>Examiner</b> Thomas J. Druan, Jr.	<b>Art Unit</b> 3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 October 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
  - 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7 and 15-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
  - a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____

### **DETAILED ACTION**

1. This action is in response to Applicant's amendment received on 08 October 2003.

#### ***Drawings***

2. The drawings were received on 08 October 2003. These drawings are acceptable.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,788,180 to Potsch et al. (hereinafter Potsch).

Potsch discloses the invention as claimed including a slitter blade assembly for cutting a workpiece comprising: a drum-shaped rotary blade 53; and a disk-shaped rotary blade 68; said disk-shaped rotary blade having a cutting edge, a first beveled surface facing said drum-shaped rotary blade and progressively spaced from said drum-shaped rotary blade toward said cutting edge, and a second beveled surface facing the workpiece and progressively spaced from said cutting edge away from the workpiece (Fig. 9). The cutting edge of Potsch is spaced apart from a severance plane. The disk-

shaped blade and the drum-shaped blade are both mounted on shafts, and they move in unison to make a cut (inherent).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch in view of US 5,423,240 to DeTorre in further view of US 5,365,821 to Munier et al. (hereinafter Munier).

Potsch discloses the invention substantially as claimed, but lacks a distance of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece is set to a value which ranges from 40  $\mu\text{m}$  to 200  $\mu\text{m}$ , an angle of said first beveled surface from said severance plane set to a value which ranges from 0.8° to 14°, an angle of said second beveled surface from said severance plane set to a value which ranges from 65° to 85°, and a second clearance surface contiguous to said second beveled surface, with the angle of said second clearance surface from said severance plane set to a value which ranges from 20° to 45°

DeTorre teaches providing a rotary blade 12 with a cutting edge 17 having an angle  $\beta$  of a first beveled surface from a severance plane set to a value which ranges from 0.25° to 1° (column 3, line 35 & fig. 2), a first clearance surface contiguous to said

first beveled surface, and an angle  $\alpha$  of said first clearance surface from said severance plane is set to a value which ranges from  $1^\circ$  to  $3^\circ$  (column 3, lines 34-35 & fig. 2).

Munier teaches providing a rotary blade 1 with a cutting edge having an angle  $\beta$  of a second beveled surface from a severance plane set to a value which ranges from  $45^\circ$  to  $90^\circ$  (the complementary angle range of angle  $\beta$ , which ranges from  $0^\circ$  to  $45^\circ$  as described in column 3, lines 39-41), and a second clearance surface contiguous to said second beveled surface, an angle of said second clearance surface from said severance plane set to a value which ranges from  $45^\circ$  to  $80^\circ$  (the complementary angle range of angle  $\gamma$ , which ranges from  $10^\circ$  to  $45^\circ$  as described in column 3, lines 39-44).

Though the knife of figure 1 of Munier is labeled as prior art, column 4, lines 15-29 state that the knife of figure 1 is used in the invention with changes in dimension related only to blade's central hole diameter and knife thickness; therefore, the angular geometries of the cutting edge are left intact.

DeTorre teaches a distance of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece set to a value of minus 0.015 to 0.045 inches (as calculated from the overlap of 0.050-0.080 inches with the crown being at 0.035-0.065 inches, leaving a maximum of 0.045 inches from the crown to the edge of the cutting edge when the overlap is 0.080 and the distance to the crown is 0.035 from the outside diameter of the anvil, and a minimum of 0.015 past the circumference of the slitter wheel when the overlap is 0.050 and the distance to the crown is 0.065 from the outside diameter of the anvil). This range includes 200  $\mu\text{m}$ .

It would have been obvious to one skilled in the art at the time of the invention to utilize the angular dimensions of the cutting edges of DeTorre and Munier in the cutting edge of Potsch in order to provide desired cutting characteristics. It would also have been obvious to one skilled in the art at the time of the invention to provide Potsch with a distance of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece set to a value which ranges from 40  $\mu\text{m}$  to 200  $\mu\text{m}$  since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, especially in view of the value disclosed in DeTorre which is on the order of magnitude as the claimed values.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch in view of DeTorre in further view of Munier in further view of US 4,972,750 to Paavola.

Potsch discloses the invention substantially as claimed, but lacks a distance from said severance plane to a junction between said second bevel surface and said second clearance surface set to a value which ranges from 0.2 mm to 0.8 mm.

Paavola teaches a distance 14 from a severance plane to a junction between a second bevel surface and a second clearance surface set to a value which ranges from 0.1 mm to 1.0 mm (column 2, lines 30-33). It would have been obvious to one skilled in the art at the time of the invention to provide the cutting edge of Potsch with a distance from said severance plane to said junction set to a value which ranges from 0.2 mm to 0.8 mm in order to exhibit the advantageous cutting edge characteristics of Paavola.

8. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch.

Potsch discloses the invention substantially as claimed, but lacks any mention of the cutting edge having irregularities along a circumference of the disk-shaped rotary blade with an irregularity quantity set to a value which ranges from 0.5  $\mu\text{m}$  to 5  $\mu\text{m}$ . It would have been obvious to one skilled in the art at the time of the invention to provide the circumference of the disk-shaped rotary blade of Potsch with an irregularity quantity set to a value which ranges from 0.5  $\mu\text{m}$  to 5  $\mu\text{m}$  since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, and a rotary blade with an irregularity quantity set to a value which ranges from 0.5  $\mu\text{m}$  to 5  $\mu\text{m}$  would cost less to manufacture than one with an irregularity constant of less than 0.5  $\mu\text{m}$ .

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch in view of DeTorre.

Potsch discloses the invention substantially as claimed, but lacks said disk-shaped rotary blade and/or said drum-shaped rotary blade made of a cemented carbide. DeTorre teaches making a rotary blade either partially or wholly out of tungsten carbide (which is a cemented carbide) in order to provide a blade with higher hardness than tool steel (column 1, lines 34-41 and column 4, lines 23-29).

***Response to Arguments***

10. Applicant's arguments filed 08 October 2003 have been fully considered but they are not persuasive. Applicant contends that the Potsch discloses a series of anvils instead of a drum-shaped rotary blade. Applicant's remarks regarding DeTorre are moot in view of the calculated range of values for the distance equivalent of CL in DeTorre as outlined above.

Regarding Potsch, Applicant's remarks are well taken; however, it is the examiner's position that the references anticipate or otherwise make obvious the claimed invention. Potsch discloses a slitter blade assembly using a slitter knife 68 with anvils 53 to form a cut in a web material. Figures 3 and 9 clearly show that the slitter knife and anvils overlap to produce a shearing action, and that the anvils are hollowed out on a side facing the slitter knife, wherein the hollow portion defines the anvil as being drum-shaped.

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Druan, Jr. whose telephone number is 703-308-4200. The examiner can normally be reached on M-F (8:30-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N. Shoap can be reached on 703-308-1082. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

*syd*  
tjd

December 23, 2003

*B-A*  
BOYER ASHLEY  
PRIMARY EXAMINER